

**"PRESS-FIT"**

Teflon terminals

**"CON-HEX"**

rf connectors

**"SEAELECTOBOARD"**

program boards

**"ACTAN"**

programming switches

**"DELTIME"**

delay lines



# SEAELECTRO

# TERMINALOGY

SEAELECTRO CORPORATION • 225 Hoyt Street • Mamaroneck, N.Y.

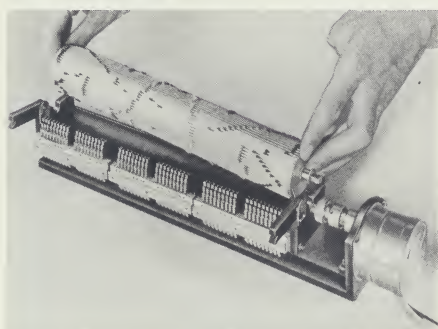
**IEEE SPECIAL**

**VOL. 9, NO. 1**

**March, 1966**

## COME TO WHERE THE ACTION IS — SEE SEAELECTRO I.E.E.E. EXHIBIT — BOOTHS 2G-43-45

### Actan Programmers With Removable, Replaceable Drums And Timers

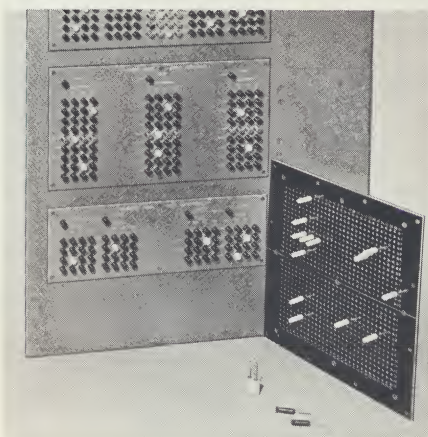


The capability of changing programs and drum speeds has just been introduced to the popular line of ACTAN drum program switches and will be shown at the I.E.E.E. Show.

With this new innovation, the program drum can be removed from the switch assembly by the simple release of two levers and replaced by another drum with a completely different program in less than a minute. To change speed of rotation, the timing motor can be replaced with a motor of a different drive speed with the simple removal of three screws.

The versatile new ACTAN programmer with replaceable drum and timer is available in the 60-position size and can be produced to the customer's requirement in any size to control from 16 to 57 circuits. As with all ACTAN programmers, the color-coded actuators on a single drum can be individually adjusted in the field. The new features will make it possible to change programs rapidly or to eliminate down time for making field adjustments, which can now be made on a spare drum that simply replaces the one in the unit.

### Visual Information Display Panels Controlled By "Sealectoboard"



Sealectro will also be showing visual information display panels that are activated by a "Sealectoboard" matrix board. Insertion of a single program pin into the cordless programmer causes an indicator lamp to light.

In test applications, this new "Sealectoboard" has proven extremely useful for indicating errors in electronic circuitry. Or, it may be used to provide visual displays of information in an area remote from the programming position. In this way, changing statistics, status or emergency situations can be simultaneously displayed in several locations, when activated by an operator using a single program board. These display boards use standard, commercially-available lamps in a variety of operating voltages and colors. Panels can be furnished in a wide variety of sizes and lamp arrangements to suit almost any requirement.

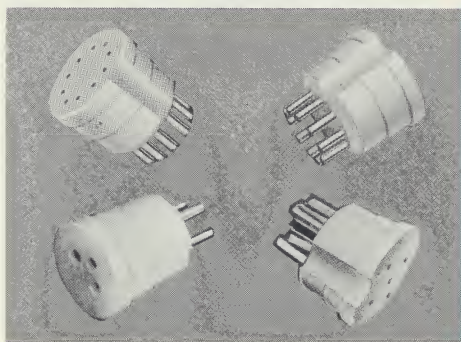
### Microwave Devices To Highlight R.F. Connector Line



On display for the first time will be a new line of precision microwave terminations—low-pass filters, attenuators and strip-line connectors from Sealectro's R.F. Components Division. The resistive terminations employ precision film resistors and meticulous manufacturing techniques to provide an extremely well-matched termination over a very wide frequency range. A maximum VSWR of 1.10:1 from dc to 4 Gc, 1.15:1 from 4 to 7.5 Gc, and 1.20:1 from 7.5 to 12.4 Gc is typically obtained with these new terminations. Available mating engagements include "ConheX", "MicroheX", N, BNC, TNC and SRM.

Included in this new line of microwave devices are "T" pads and other types of attenuators providing an almost purely resistive impedance for microwave application. Low-pass filters with a variety of cut-off frequencies and with various mating engagements will also be on display.

Strip-line connectors will be shown with most mating engagements and for a number of board thicknesses.

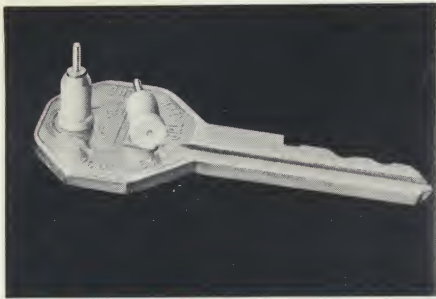


### LOW COST, "PRESS-FIT" TEFLON INSULATED SOCKETS FOR IC PACKAGES AND TRANSISTORS TO MAKE THEIR DEBUT

A whole new line of Teflon-insulated sockets for integrated circuit and transistor packages, designed for applications where low cost and high performance are of primary importance, will also be introduced by Sealectro at the I.E.E.E. show.

This new line of low-cost sockets features a unique contact design which ensures minimum contact resistance with repeated device insertions for an extremely long and reliable life. Included in the new line, the "Press-Fit" Series 60, are sockets for 8, 10 and 12-lead TO-5 integrated circuit packages as well as 3 and 4-lead TO-18 and TO-5 packages. As with all "Press-Fit" devices, these new sockets require but a single hole in the chassis for a mechanically solid and highly reliable socket mounting.

## NEW "PRESS-FIT" JACK PROBE COMBINATION ANNOUNCED

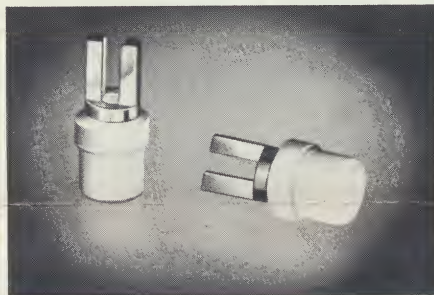


Expanding the design versatility of "Press-Fit" terminals, Sealectro has added a new combination jack and probe. From the panel front the recessed lug of the SKT-0300 test jack is designed to accept a .030" x .200" probe. The tail is itself a .040" probe. The bushing is of 100% pure virgin Teflon in order to assure maximum life and reliability in adverse environments. For rapid positive installation, use Sealectro tool No. S-48.

Other "Press-Fit" designs include stand-offs, probes and jacks, feed-thrus, transistor sockets and holders, and similar sub-miniature hardware for electronics assemblies.

## STAND-OFF HAS SLOTTED TERMINAL FOR FASTER SOLDERING

A sub-miniature "Press-Fit" Stand-Off incorporates a slotted terminal to facilitate soldering of wire leads in assembly line operations. Designated as an ST-SM-750 SL, the terminal features a 100% pure virgin Teflon bushing with a major diameter of .172" and a minor diameter of .148"  $\pm .002$  /  $-.000$  and can be inserted into chassis of .085" maximum thickness. Bushings can be had in any of ten EIA colors for color-coding chassis wiring points. Lug material is brass with a silver-over-copper-flash plating. A B-9-A insertion tool is available for inserting terminals into a prepared chassis hole.



## SEMI-ASSEMBLED STAND-OFF INSTALLS IN UNCHAMFERED HOLE



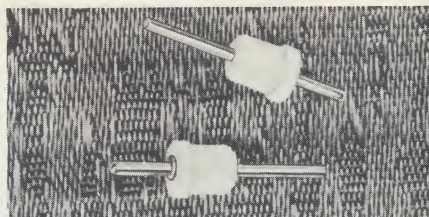
As a variation of its widely used "Press-Fit" line of sub-miniature hardware, Sealectro has produced a semi-assembled stand-off, the RST-2-SM-1160-L2, designed for automated installation in an unchamfered hole.

In this design, the tie lug is only partially inserted into the Teflon bushing until after insertion in the hole. Insertion of the lug expands that portion of the bushing's minor diameter which extends beyond the chassis to securely lock the part in place. Dimensions of the RST-2-SM-1160-L2 are .132" minor diameter by .220" long for insertion in a chassis .109" thick. The lug protrudes .200" beyond the bushing when fully seated.

As with all Sealectro manufactured hardware only 100% pure virgin Teflon is used in the precision machined bushings to provide maximum life and reliability in all environments. Bushings to terminal designs are also available in any of the ten EIA colors for circuit coding.

## TEFLON TERMINAL FEATURES LONGER OVERALL LENGTH

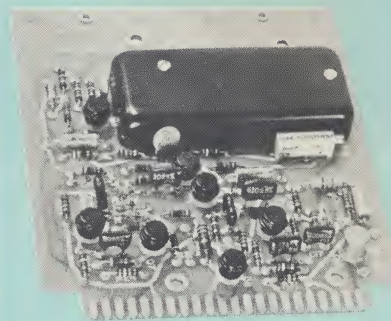
With an overall terminal length of .725", the FT-SM-19L2 is a new "Press-Fit" Teflon feed-thru. The length, on the tail end facilitates soldering operations in hard-to-get-at places. The Teflon bushing has a major diameter of .172" and is .160" in length with a .148"  $(\pm .002 / -.000)$  minor diameter. The lug material is brass electroplated with a solder finish. For ease of insertion, a B8-16 insertion tool is also available from Sealectro.



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**IEEE BOOTHS**  
**2G43**  
**2G45**

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## Packaging Advances Reduce Price Of Delttime's RZ-1 Digital Circuit Module For Delay Lines



Without any reduction in performance, Delttime has reduced price on the Delttime RZ-1 digital circuit module through advances in the unit's packaging. By replacing the standard wired unit with a printed circuit assembly, Sealectro has reduced manufacturing costs and improved production efficiency and reproducibility resulting in faster delivery cycles.

The RZ-1 is a digital write-read amplifier for magnetostrictive delay line applications packaged with the delay line. This results in a complete input-output module for long time delays up to 10,000 microseconds at 1 Mc PRF. The write amplifier drives the delay line, the read amplifier amplifies the delay line output and restores the input pulse waveform. The addition of external clocking and a feedback loop converts the delay module into a serial recirculating memory for digital data storage.

## Family Of Delttime Delay Lines Offers Four Delay Periods

Four magnetostrictive delay lines with generally similar electrical characteristics except for delay time have been added to the Sealectro line.

All four units are for 10-volt input with a pulse width of .35 to .50 microseconds at 50% amplitude and a maximum rise and fall time of .08 microseconds. Maximum delay times for the four units are: Model 190A, 1 millisecond; Model 192A, 2 milliseconds; Model 213A, 5 milliseconds; and Model 214A, 10 milliseconds.

Additionally, Delttime can supply complete input-output circuit modules which perform all driving and sensing functions from standard logic inputs. This eliminates the need to develop compatible circuitry.



## Recessed "Sealectboards" For Relay-Rack Mounting

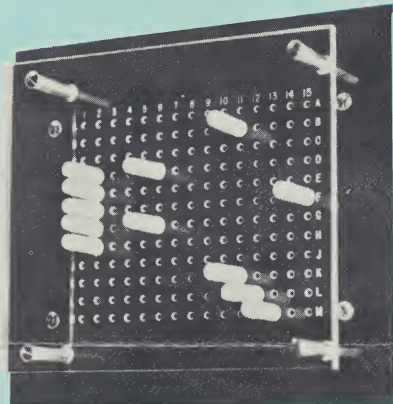


Recessed "Sealectboard" program boards for relay-rack mounting are now available from Sealectro. With this arrangement, program pins are protected from damage by a newly-designed mounting for matrix boards. Designed for 19" relay-rack applications, the new mounting arrangement recesses the board including the removable program pins. Provision is made to allow a variation in recess from pin position flush with the face of the relay rack, to a total recess of 3".

In addition to the safety features of recess mounting, transparent cover plates are available to prevent unauthorized tampering with a prepared program.

"Sealectboard" program matrix boards are ideal where a variety of inputs require selective switching to associated outputs. "Sealectboards" are also available to provide multiple but discrete single-pole, single-throw or double-throw switching in non-matrix form. Typical applications are for computer programming, machine tool controls or special test apparatus. With built-in modular internal construction, almost any combination of program holes can be furnished.

## New Program Lock-In



To meet special safety requirements, a "Sealectboard" equipped with a transparent cover panel that prevents unauthorized pin removal is now available.

At the same time, the protective cover provides an unobstructed view of the program and the pin arrangement.

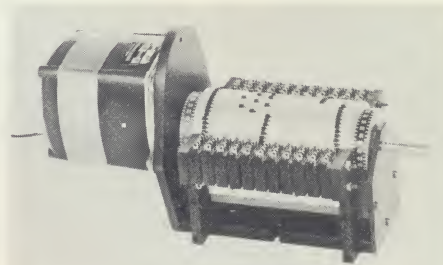
The transparent cover panel is also provided for applications where the program board is subject to vibration that would otherwise cause pins to shake loose from the board.

The cordless program board is available in standard and special figurations offering virtually unlimited combinations of horizontal and vertical hole electrical matrix arrangements to meet any requirement.

## 20-CIRCUIT ACTAN PROGRAMMER TRIGGERS SNAP-ACTION SWITCHES IN STEPS OF 1 TO 60

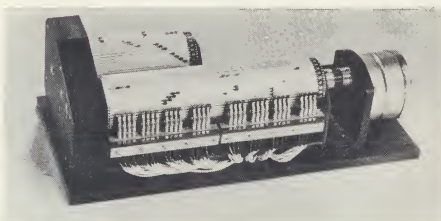
Electrical or electronic circuits controlled by 20 snap-action switches in a minimum of space can now be actuated by a new type of Actan programming device.

The programmer, which is driven by a stepping motor and is therefore adjustable in steps from 1 to 60, features two banks of 11 enclosed snap-action switches, one on either side of the drum. One switch in each bank is utilized for controlling the programmer's stepping motor, while the other 10 in each bank are used for switching. The 10 switches in one bank are offset from the 10 switches in the other bank to permit each of 20 rows of actuators to trigger only one switch during any one complete 360-degree revolution of the drum. Drum positions are numerically indexed.



The contacts that are designed into the unit are form C, UL approved, 10 ampere, 115 V AC. The motor is driven from 115 V AC line voltage.

## NEW PROGRAMMER WITH INTERGEARED DRUMS DESIGNED AS COMPOUND TIMING DEVICE

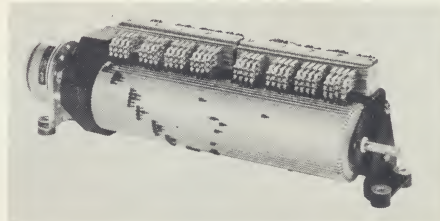


A 60-position Actan programming switch that features two drums geared together for sequencing remote sensing apparatus has been designed and is now available.

In applications, for example, where a requirement is to send and record the noise level of various equipments and machinery at different locations, the intergeared switch makes it possible to make a recording at location 1, turn off the recorder for time T, then switch to location 2 with the second drum, and then turn on the recorder again with the first drum. By using this arrangement, the noise or other errors from the switching operations are eliminated from the sensing circuit and accurate measurements can be made. The time sequences can be changed and set at will by merely changing the positions of the actuators on the drums.

## ACTAN CIRCUIT CAPACITY MULTIPLIED BY STACKED CONTACT ARRANGEMENTS

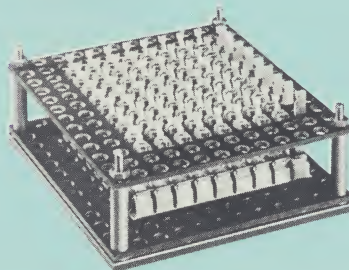
Designed for high density switching requirements, a new "Actan" programming switch that features two and three tiers of contacts stacked on top of each other is now available from Sealectro. By stacking the banks of form C contacts up to three high, two or three times as many electrically discrete circuits as before may be simultaneously programmed by the program drum that rotates beneath it. The new switch is available for either time-based, pulsed or manual operation. In addition to facilitating high density switching, the new configuration permits a space savings of up to 67% for many applications.



The new devices are ideal for such applications as scanning, sequencing, timing, code generation and general programming.

## Single Contact Program Boards For Single Point Selection

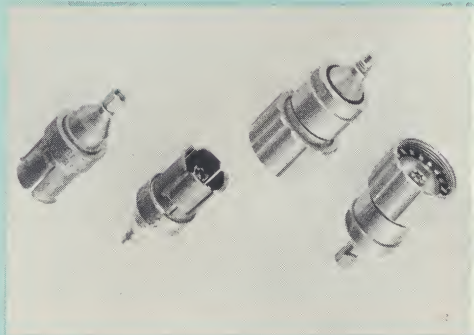
Program boards that permit multiple output from a single signal source are now available.



The single-contact "Sealectboard" provides individual, isolated terminations for every coordinate point on the matrix. The first or upper deck provides a common bussed line for combining parallel input signals, while the lower deck with its individual contact permits distribution of the combined output to isolated or associate circuitry. The new model provides a control point for programming multiple inputs and outputs and allows paralleling circuits.

The single-contact "Sealectboard" may be used as a switching device, or a component interpositioner through the use of the "Sealectboard" diode holders.

**CONNECT SUBMINIATURE CABLE DIRECTLY TO TEST EQUIPMENT . . . NEW PRECISION ADAPTERS MATE GENERAL RADIO 900 AND 874 CONNECTORS WITH ANY OF SEAELECTRO'S 50-OHM SUBMINIATURE CONNECTORS PER MIL-C-22557**

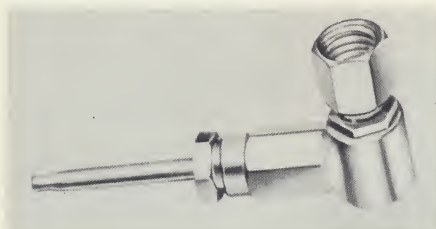


A new group of precision coaxial adapters designed to mate the popular General Radio Company 900 and 874 series of connectors with Seaelectro's 50-ohm subminiature connectors has been introduced. These units, available exclusively from Seaelectro, are designed with plugs or jacks in the screw-on, snap-on or slide-on mounting configuration.

The new precision adapters now make possible the precision testing of any MIL-C-22557 type connector, component or cable assembly with a quick and easy connection to any test equipment utilizing the GR 900 or 874 connector as its output terminal. These test equipments include those produced by General Radio Company, Hewlett-Packard Co., Rantec Corporation and others.

Adapters for the GR-900 series are designated 5-000-73-607 for the plug and 5-000-74-607 for the jack. The plug for the GR-874 series is designated 5-020-73-6018B while the jack is designated 5-020-74-6018B. Electrical specifications include a frequency range of dc to 9 Gc and an impedance of 50 ohms for all units. VSWR for the GR-900 adapters is 1.05 maximum from dc to 4 Gc, 1.10 maximum from 4 Gc to 7.4 Gc, and 1.15 maximum from 7.5 Gc to 9 Gc. For the GR-874 adapters, VSWR is 1.05 maximum from dc to 4 Gc, 1.15 maximum from 4 Gc to 7.5 Gc, and 1.20 maximum from 7.5 Gc to 9 Gc.

**"ConheX" Subminiature RF Connector Designed For Use With Semi-Rigid Coaxial Cable**



A subminiature RF connector designed exclusively for application on semi-rigid coaxial cables is now available from "ConheX". Semi-rigid cables are finding wide usage in high frequency applications where it becomes desirable to maintain absolute electrical characteristics. The 50-ohm, semi-rigid cable is similar to a standard 188/U coaxial cable except that it is constructed of a solid copper shield with a Teflon dielectric around the center conductor. The semi-rigid cable has a diameter of .082".

The subminiature RF connector for use with the semi-rigid cable is designated as #50-011-3702 right angle plug and features an exclusive collet-type clamping action, which when finger tightened will not permit the cable to be pulled out. No soldering operation is required with this screw-on connector other than that of attaching the contact to the center conductor. The completely captivated contact insures proper engagement of mating parts.

**Subminiature RF Connectors Designed For Strip Line Applications**



Designed specifically to terminate subminiature coaxial cables to new strip line packages, the ConheX Division of Seaelectro has made available RF subminiature connectors for this requirement. A typical unit is the 50-058-0000 right angle receptacle, which provides direct connection to the strip line package. The connector features a .0001 gold plating over the brass body. Strip line circuitry makes possible high density packaging of electronic circuits unattainable through conventional coaxial techniques.

**New "ConheX" Subminiature Plug Designed For Bulkhead Mounting**



A 50-ohm screw-on plug receptacle for use with miniature coaxial circuits is available from Seaelectro. This new "MichoheX" connector, No. 50-046-0000, is D hole mounted with the mounting threads located on the inside of the equipment panel.

The "ConheX" No. 50-046-0000 connector features rugged construction, heavy .0001" gold plating, and virgin Teflon insulation to maintain maximum electrical efficiency. The 50-046-0000 plug receptacle is a companion piece to the "ConheX" 50-045-4300 bulkhead receptacle and allows designers additional freedom in connector selection.

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